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SINCUS NEWS

1229 Rhodes Rd.
Johnson City, New York 13790
(607)798-7219

----------Since 1982----------

Happy-H A P P Y-Happy

Here's wishing one and all- a Very Happy Thanksgiving Day, and Happy Holidays this December and Happy New Year 1988 Enjoy, be merry, be thankful and then write an article for your newsletter ! from your editor.

H A P P Y F I V E Y E A R S O L D

FIVE years old this November! A few charter members may well remember the early meets- they were frequent- as many as three a month, and well attended! I remember that most of the time in the early months was spent writing a charter, figuring out how to run the meets, advertise, get a room and pay for it all!! The least problem was subject matter- everything was of interest and so many volunteered to give talks on so many varied areas. Practical problems, such as tape loads and basic programming, RAMTOPS and something called machine code, were just a few of the early subjects. We were all five years younger, many new to computers and trying to get a handle on the darn thing. We sure were grateful to the few computer professionals in the area who had the sense to get into Sinclair computers. They made a big impact on our ability to get into the machines and make the most of them.

Personally I didn't think the TS computer community would hold together this long. I wrote an unanswered letter to Uncle (Sir) Clive to the effect,"come back to the US market, you have a great product, we'll buy it, just support it." Well, he didn't, in fact the whole market just sorta dribbled away. Look for a computer shop nowadays, clones for ibm, apple and a few old Ataris and Commodores, and Tandy clones. New products for the TS line still come out almost monthly. Fewer and fewer retailers hawk the remaining wares. The QL is being dumped on the market, hardware is getting cheaper, software still holding high prices.

Something new always excites our interest, something old just doesnt quite cut it. Reading about the ZX81/TS1000/1500 doesnt really do it for me. But my eleven year old finds it neat, but having used the Apple IIs in school, erratic tape loads, SLOW tape loads just dont do it. SO when Wes B. brings up his bank switching hardware and the possiblity of RAM, lots and lots of RAM, of instant loads, a whole new world opens up for the TS2068. Those interested in this as a group project, start thinking about it, like start dreaming of 640K RAM just for a start. The possiblity of making this a group project will be discussed at the November meeting, the hardware problems, power supply and buffering and costs, then too the major rewriting of the operating ROM for bank switching and the making of EEPROMS. I don't want to discourage anyone, nor do I wish to make it sound as easy as a printer interface.

Our September meet, as well as the October meet were short and sweet, with Wes talking about his bank switching project. He has been working on the prototype for several months now and maybe able to help the rest of us decide whether or not to get into bankswitching. Dan Lamen

brought his TS1000 hi res program in for a demo in October, have to bring it back again Don.

Many are finding inexpensive but very good 3" disc drives- diskettes about $4 each which hold 360K - from Amdek - write or call Peripherals Direct, PO Box 4301, Northbrook IL 60065 (800 - 332-9988: $45 single order, cheaper in quanity. Limited quanity. Several have had good luck using the LARKIN IF system with it. LARKEN Electronics, R.R. #2, Navan, Ontario Canada K4B 1H9 for info on the IF.

TS REPAIRS-from the Detroit Area TS News-a message on Compuserve listed the following: TS2068 repairs-$15 plus parts, Promised Land Electronics, Dan Elliott, Rt 1, Box 117, Cabool MO 65689 (314) 739-1712 5pm - 9pm and (417) 496-4571 weekends. Anyone using this service, let us know your opinion of it, and we'll share with everyone.

SINCLAIR's Z88-in the Sep/Oct 87 issue of Time Designs Magazine (TDM), hands on reports are coming in. The resident software, display, the machine itself are very good. But... the lack of a data storage system other than the 128K RAM cartridge, BBC BASIC as opposed to Sinclair's BASIC or superBASIC, no internal modem, and recent price jump to 399 (pounds) present the buyer with a bag of problems right off the bat. Mark Steuber of Sharp's and Rob Curry of Curry Computers got to do the test drive. (TDM, 29722 Hult Road, Colton OR 97017: $16.95 a year for subscription)

Hello and thanks to renewing members; Curtis and Mel Murray, Binghamton, NY; Dan Dodway, Port Crane, NY; Hal Sohn, Vestal, NY; Clyde Tackley, Johnson City, NY; and Jerry Knickerbocker, Binghamton, NY; Don Walterman, Sterling Hts, MI and Hello and welcome to new member Ike Walker, Charleston, WV.

Tape swap report: John Colonna reports a brisk business in our first two tape swap exchanges. Tape number three is well under way, and hopefully by the next newsletter it will be ready. Joan Kealy has sent us MORE of her orginial programs, and peeking at one kept me busy one whole evening. "Quizmstr" has to be one of the neatest ways to learn a subject.

Below is a list of our swaps, monthly, bi-monthly and when ever, these people help keep us up on what goes on around the US and Canada. I notice the end of summer drought on articles, lists of user groups and lots of cartoons and RLE pics in many of the current issues. Personally I am grateful to all who have supported SINCUS NEWS so well over the past five years, I can not do it alone, so I appreciate any and all help.

Newsletter- GROUP, contact, address

SINC-LINK; TORONTO TSUG, POB 7274, STATION A TORONTO, ONTARIO, M5W 1X9 CANADA:bi-monthly

LISTing; LONG ISLAND STUG, POB 438, CENTERPORT, NY 11721:bi-monthly

THE PLOTTER; CLACKAMUS COUNTY AREA TSUG, 1419 1/2 7TH STREET OREGON CITY, OR 97045: $15/yr, monthly

SLUG Newsletter; SINCLAIR LOUISVILLE UG, 4122 WALLINGFORD LN. LOUISVILLE, KY 40218-2365: monthly

ZX-APPEAL; VANCOUVER SINCLAIR UG, R.L. HUMPHREYS, 2006 HIGHVIEW PL., PORT MOODY, BC V3H 1N5 CANADA: $15/yr, monthly

CATS NEWSLETTER; CAPITAL AREA TSUG, POB 467, FAIRFAX STATION, VA 22039: $18/yr, monthly

THE RAMTOP; GREATER CLEVELAND SINCLAIR UG, James Dupuy, 6514 Bradley Ave (Down), Parma, Ohio 44129: $15/yr, monthly

TSUG-MILE HIGH CHAPTER, F. Holland, 1423 S. Pearl St. Denver, CO 80210:monthly

SMUG BYTES; SINCLAIR MILWAUKEE UG, Bill Heberlein, POB 101, BUTLER, WI 53007: $10/yr, monthly

TIMELINEZ; SAN FRANCISCO BAY AREA UGs,(Peninsula UG; East Bay Z80 UG; Silicon Valley Sinclair Technology), Rita Carr, 6675 Clifford Drive, Cupertino CA 95014-4530: $10/yr, monthly

DALLAS T/S/Amstrad UG Newsletter; George E. Edmonds, POB 153421, Irving, Texas 75015: monthly

INDIANA STUG Newsletter,513 E. Main Street, Peru, IN 46970: monthly

DETROIT AREA TS NEWS; T/S SIG of the Southeastern Michigan Computer Organization; Barry Carter, POB 614, Warren MI 48090: $10/yr, monthly

Timex Sinclair Bulletins, Ottawa-Hull TSUG, Bill Harmer, 97 Ruskin St. Ottawa, Ontario K1Y 4B3 Canada

NITE-TIMES NEWS; Chicago Area Timex UG, 1885-A Yorktown Avenue Great Lakes, Illinois 60088: $10/yr, monthly

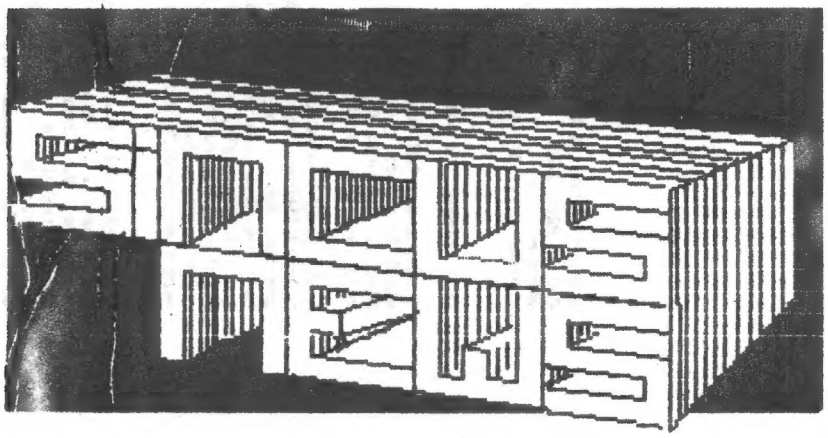
The SINC TIMES, NORTH EAST FLORIDA TSUG, 1707 King St., Jacksonville, FL 32204:quarterly

QZX Journal; 2025 O'Donnell Dr., Las Cruces, NM 88001: $12/yr, monthly

TS-SAFE Disk Up-Date, 1317 Stratford Ave., Panama City, FL 32404:quarterly, $12/yr

SEASONS GREETINGS FROM

AIT of us



Matthew Zenkar
PO Box 12534
Rochester, NY 14612-0534
USA
716-663-2048 after 6pm
eastern time

October 8, 1987

SINCLAIR COMPUTER USERS SOCIETY
C/O MR PAUL HILL
~~PCB-66~~
JOHNSON CITY, NY 13790
USA

Dear Prospective Customer:

I have a new RAM expansion board available for the Sinclair QL computer which is presently being advertised in Computer Shopper Magazine and Sinclair QL World Magazine. I would like to take this opportunity to tell you about my expansion.

With the RAM board installed, you will have a total RAM memory area of 640K available. With multitasking software that is available from other sources, you will be able to load and run all four of the software packages that were included with the computer. While the programs do not run simultaneously, you are able to keep them resident and switch back and forth between them. With RAM disk software, also available from other sources, you will be able to configure the RAM expansion into a very fast RAM DISK which is about one-hundred times faster than a floppy disk.

The board plugs into the expansion port and is small enough so that you can reinstall the expansion port cover if you are not using another interface. With four-layer printed circuit technology, I bring every single line of the expansion port to the other side of my board so that you can plug in another interface and run it simultaneously with my RAM board. The expansion port on my board is the same electrically as that within the QL itself. Some of the other RAM expansions, like the one made by Miracle Systems, do not do this. The result is that some of the available disk interfaces will not work with their board. My board will work with any available disk interface with the exception of three and with those three, it will not work only because the memory on them will occupy the same space as it does on my board. These three are the SANDY 256K SUPER Q BOARD, SANDY 512K SUPER Q BOARD, and MIRACLE SYSTEMS TRUMP CARD. (I do not sell any of these interfaces.) However, it will work with the unexpanded SANDY SUPER Q BOARD which has no additional memory on it. The result will be something like the TRUMP CARD except, the total available RAM area will be 640K.

I believe I have done what I have set out to do and that is, design the best available RAM expansion for the Sinclair QL computer. The only board on the market that even comes close to preforming as well as mine does is the RAM board made by CST. Their advertisement in "Sinclair QL World Magazine" boast that their board is the only board available that operates with the high performance of "zero-wait state operation". Not any more. QL owners in general have also experienced the unpleasent fact that most interfaces draw large amounts of power causing excessive heating and power surge problems, especially when used in conjuntion with disk interfaces. Special circuitry on my board enables me to shut off all unused circuits when not needed, unlike the circuits on other boards which remain active, thusly reducing the overall amount of current consumed by the board. Also, I am including in the circuitry a special kind of surge suppression device which because of its response time will eliminate any power line noise from within the entire QL power system. The cover I am supplying for other interfaces is black-anodized aluminum, unlike the painted and plastic covers offered by other manufacturers.

I am so confident in the reliability and the fact that you will like this board that I am offering a guarantee and a warantee with the unit.
Guarantee: If for any reason other than outlined below, you are not satisfied with your MZ512K RAM expansion board within thirty days after you receive it, return it postage paid to me for a full refund.
Warantee: If your unit should fail for any reason other than outlined below due to defects in materials and workmanship during the first five-years of ownership, return it to me postage paid. Include funds sufficient for the return postage; I will repair and return your unit in a timely manner.

The guarantee or warantee will not cover problems arising from owner misuse, abuse, or problems arising from use of the board with Sinclair QL computers that have been modified to operate at clock speeds greater than the normal 7.5 MHZ.

If you were to order the CST 512K RAM expansion you would have to pay $230.00 for it as compared with my price of $130.00 plus $5.00 shipping and handling.

Should you choose to order my unit for your QL, send check or money order for $135.00 made payable to Matthew Zenkar; or, include your VISA/MC card number, expiration date, and signature to the address given at the top of this letter. Thank you.

Sincerely,

Matthew Zenkar

Matthew Zenkar

mz

September 30, 1987

Dear Paul

Thank you for your kind letter and interest. Your newsletters are very interesting. You have a colossal experience and a power. The computer networks are not in Poland. We have no modems, no floppy disk drives and no oun printer. We have only a theotetical knowledge and a big enthusiasm.

I would like to tell you a little about myself. I am 32. I have the wife and two wonderful daughters: 4 and 7. My wife is a school-master in the high economic school. I am an electronics ingineer in the computer service for one of the largest computer centers in Poland. Here we have two largest computers of ICL from United Kingdom. I am interested in 8 and 16 bit computers. I try with my friends to find the application of our 8 bit machines (two TIMEX 2048 and ATARI 800 XL with a data recorder) in the school and home. I lecture once a week in high school. I read regular the small systems jurnal BYTE from your country in our library.

Second my hobby is the sea yachting. I teach the young people of the seamanship such as the sea navigation, the theory of sailoring, the pilotage, the meteorology etc.

Outside the yachting season I spend my no long free times study a computer knowledge. At present I am learning the C programming. I like it. The C lenguage permits to make the fantastic tools!

I and my friends try to raise the funds for IBM PC XT Compatible or ATARI ST. It is very difficult in the bad circumstances in Poland. The prices of a computer equipment are very large confrontation with our wages. The price of 8 bit computer is about the payment for 6 months of a work of a good engineer and the price of 16 bit computer (e.g. IBM PC XT Compatible from Taiwan or ATARI ST) is the wage of four years!!! (I must to work 8 hours for one 5.25'' diskette.)

Considering, that all our wages we spend for no rich life, the purchase of the computer without the help from outside is impossible.

Perhaps you have a good idea how we can to earn a money for a computer equipment in your country. In the midst of my friends are the good computer programmers and the electronics specialists. We can to make the specialistic works for a small payment at somebody discretion. Maybe this way we will make the money for our ideal 16 bit computer.

We are jealous of you because you can to buy the good personal computer at the price that is your month's wage. It is fantastic! I and my friends will be glad to take up the co-operation with everybody who can to help us.

Yuor country is very far from Poland. The answer to the letter we receive two month later. It is very long time. Nevertheless I believe you will maintain the mail and maybe the co-operation in the microcomputer domain.

I send the greetings from Poland.

Yours Truly,

Zbigniew Dziekonski

My address: Osiedle XX-lecia PRL 18 A/2
82-200 MALBORK, POLAND

In the last issue I had included a letter from the above correspondant. I had mailed a newsletter and note to the effect that I doubted many TS users could afford to send a computer or money, but that I was including his letter in the newsletter. The response is above, a little surpising, first that Zbigniew's English is miles ahead of my Polish, and that he is into yachting! And his hope springs eternal.

The copy of Currys ad is from the Daily Mirror, Oct 4, 1987.

A couple points that maybe blurred after several repro transfers;

There is NO address for the store- one either knows or rings 01-200-0200 anytime in Britian

The credit card in the lower right has an APR of 33.7%, if interested write: Currys BudgetCard from Currys Ltd. 46-50 Oxbridge Road, London, W5 2SU

Note the 4 year guarantee: with purchased insurance

Current exchange rates are about $1.50 to the pound, making the Sinclair 128 + 3 about $300(US)

Amstrad is giving a lot of extras with the 464- for about $450(US) he is giving the computer, color monitor joystick, lightpen and user group freebies

On the next four pages, TS2068 ROM disassembly by Wes Brzozowski continues. This project started last year, appearing in the Nov/Dec 86 issue and continuing into 1988. At the conclusion of the disassembly a limited complete series - 50 - maximum will be sold at about cost to members only. Stay tuned...Thanks Wes, Merry Christmas and Happy New Year to You and your family!

```
0F46  010300   L0F46 LD   BC,00003
0F49  11705C         LD   DE,05PCC
0F4C  21445C         LD   HL,NSPPC
0F4F  CB7E           BIT  7,(HL)
0F51  2801           JR   Z,L0F54

0F53  09             ADD  HL,BC

0F54  EDB8     L0F54 LDDR

0F56  FB360AFF L0F56 LD   (IY+10),0FF
0F5A  FDCB019E       RES  3,(IY+1)      ;FLAGS - K mode
0F5E  FDCB029E       RES  3,(IY+2)      ;TV_FLAG
0F62  C3320E         JP   00E32         ;Go get another line

                ;Error messages
                ;  Similar to Spectrum at 1391

0F65  80             DEFB 080
0F66  4FCB           DEFB "O","K"+080
0F67  4E4358D4       DEFB "NEXT without FO","R"+080
0F6C  20776974
0F70  686F7574
0F74  20464FB2
0F78  56617269       DEFB "Variable not foun","d"+080
0F7C  61626C65
0F80  206E6F74
0F84  20666F75
0F88  6EE4
0F8A  53756273       DEFB "Subscript wron","g"+080
0F8E  63726970
0F92  74207772
0F96  6F6EE7
0F99  4F757420       DEFB "Out of memor","y"+080
0F9D  6F662060
0FA1  656D6F72
0FA5  F9
0FA6  4F757420       DEFB "Out of scree","n"+080
0FAA  6F662073
0FAE  63726565
0FB2  EE
0FB3  4E756D62       DEFB "Number too bi","g"+080
0FB7  63722074
0FBB  6F6F2062
0FBF  69E7
0FC1  52455455       DEFB "RETURN without GOSU","B"+080
0FC5  524E2077
0FC9  6974686F
0FCD  75742047
0FD1  4F53554C2
0FD5  456E6420       DEFB "End of fil","e"+080
0FD9  6F662066
0FDD  696CE5
0FE0  53544F50       DEFB "STOP statemen","t"+080
0FE4  20737461
0FE8  74656D65
0FEC  6EF4
0FEE  496E7661       DEFB "Invalid argumen","t"+080
0FF2  6C696420
0FF6  61726775
0FFA  6D656EF4
0FFE  496E7465       DEFB "Integer out of rang","e"+080
1002  67657220
1006  6F757420
100A  6F662072
100E  616E67E5
1012  4E6F6E73       DEFB "Nonsense in BASI","C"+080
1016  656E7365
101A  20696E20
101E  42415349
1022  C3
1023  42524541       DEFB "BREAK - CONT repeat","s"+080
1027  4B202D20
102B  434F4E54
102F  20726570
1033  656174F3
1037  4F757420       DEFB "Out of dat","a"+080
103B  6F662044
103F  4154C1
```

```
1042  496E7661       DEFB "Invalid file nam","e"+080
1046  6C696420
104A  66696C65
104E  206E616D
1052  E5
1053  4E6F2072       DEFB "No room for lin","e"+080
1057  6F6F6D20
105B  666F7220
105F  6C696EE5
1063  53544F50       DEFB "STOP in INPU","T"+080
1067  20696E20
106B  494E5055
106F  D4
1070  464F5220       DEFB "FOR without NEX","T"+080
1074  77697468
1078  6F757420
107C  4E455854
1080  496E7661       DEFB "Invalid I/O devic","e"+080
1084  6C696420
1088  492F4F20
108C  64657669
1090  63E5
1092  496E7661       DEFB "Invalid colo","r"+080
1096  6C696420
109A  636F6C6F
109E  F2
109F  42524541       DEFB "BREAK into progra","m"+080
10A3  4820696E
10A7  746F2070
10AB  726F6772
10AF  61ED
10B1  52414D54       DEFB "RAMTOP no goo","d"+080
10B5  4F20206E
10B9  6F20676F
10BD  6FE4
10BF  53746174       DEFB "Statement los","t"+080
10C3  656D656E
10C7  74206C6F
10CB  73F4
10CD  496E7661       DEFB "Invalid strea","m"+080
10D1  6C696420
10D5  73747265
10D9  61ED
10DB  464E2077       DEFB "FN without DE","F"+080
10DF  6974686F
10E3  75742044
10E7  45C6
10E9  50617261       DEFB "Parameter erro","r"+080
10ED  6D657465
10F1  72206572
10F5  726FF2
10F8  54617065       DEFB "Tape loading erro","r"+080
10FC  206C6F61
1100  64696E67
1104  20657272
1108  6FF2
110A  4D697373       DEFB "Missing LRD","S"+080
110E  696E6720
1112  4C524FD3
1116  2CA0           DEFB ",","," +080
1118  7F203139       DEFB "c 1982 Sinclair Research Ltd"
111C  38322053
1120  696E636C
1124  61697220
1128  52657365
112C  61726368
1130  204C7464
1134  0D0D           DEFB 00D,00D
1136  7F203139       DEFB "c 1983 Tisex Computer Cor","p"+080
113A  38332054
113E  69586578
1142  20436F6D
1146  7075746F
114A  7220436F
114E  72F0
```

```
                ;Error B : No room for line
                ;  Identical to Spectrum at 1655

1150 3E10   L1150 LD  A,#10       ;Error number
1152 010000       LD  BC,#0000
1155 C3E30E       JP  #0EE3       ;Will eventually print error message

                ;Add a line to the BASIC program
                ;  Identical to Spectrum at 1659

1158 ED43495C     LD  (E_PPC),BC  ;Make new line to be the current line
115C 2A505C       LD  HL,(CH_ADD)

115F EB     L115F EX  DE,HL
1160 213011       LD  HL,#1150    ;Address of ERROR - B
1163 E5           PUSH HL         ;Make it a RETurn address
1164 2A615C       LD  HL,(WORKSP)
1167 37           SCF
1168 ED52         SBC HL,DE       ;Length of line

116A E5     L116A PUSH HL

116B 60     L116B LD  H,B
116C 69           LD  L,C         ;HL = line number
116D CD9816       CALL #1698      ;See if a line already has the number
1170 2006         JR  NZ,L1178    ;If not

1172 CD2017       CALL #1720      ;Find the line
1175 CD5017       CALL #1750      ;Wipe it out

1178 C1     L1178 POP BC
1179 79           LD  A,C
117A 3D           DEC A

117B B0     L117B OR  B         ;Length = 0, if it's only an ENTER
117C 2828         JR  Z,L11A6     ;If length = 0

117E C5     L117E PUSH BC
117F 03           INC BC
1180 03           INC BC
1181 03           INC BC
1182 03           INC BC        ;Add 4 bytesfor length & line #
1183 2B           DEC HL        ;Point to byte before line #
1184 ED5B535C     LD  DE,(PROG)
1188 D5           PUSH DE
1189 CDB812       CALL #12B8    ;Open space for line
118C E1           POP HL
118D 22535C       LD  (PROG),HL

1190 C1     L1190 POP BC
1191 C5           PUSH BC       ;BC=length

1192 13     L1192 INC DE
1193 2A615C       LD  HL,(WORKSP)
1196 2B           DEC HL
1197 2B           DEC HL
1198 EDB8         LDDR          ;Copy the line
119A 22495C       LD  HL,(E_PPC)  ;Line number
119D EB           EX  DE,HL
119E C1           POP BC        ;Length
119F 70           LD  (HL),B
11A0 2B           DEC HL
11A1 71           LD  (HL),C    ;Enter the length of the line
11A2 2B           DEC HL
11A3 73           LD  (HL),E
11A4 2B           DEC HL
11A5 72           LD  (HL),D    ;Enter line number to the line

11A6 F1     L11A6 POP AF
11A7 C3280E       JP  #0E28     ;Back to the main loop

                ;Initial Channel Data
                ; Same form as Spectrum at 15AF

                ;Channel K - For the edit line
11AA 0005         DEFW #0500    ;Screen/printer output address
11AC 0E0C         DEFW #0C0E    ;Keyboard input address
11AE 4B           DEFB "K"      ;This is channel K

                ;Channel S - Main screen output
11AF 0005         DEFW #0500    ;Screen/printer output address
11B1 BF11         DEFW #11BF    ;Causes error message - no screen input
11B3 53           DEFB "S"      ;This is channel S

                ;Channel R - RAM workspace
11B4 E70A         DEFW #0AE7    ;Add character to Input or Edit works
11B6 BF11         DEFW #11BF    ;Causes error message - no RAM input
11B8 52           DEFB "R"      ;This is channel R

                ;Channel P - Printer output
11B9 0005         DEFW #0500    ;Screen/printer output address
11BB BF11         DEFW #11BF    ;Causes error message -no printer inp
11BD 50           DEFB "P"      ;This is channel P

11BE 80           DEFB #80      ;Marks end of channels

                ;Error J - Invalid I/O device

11BF CF           RST 8
11C0 12           DEFB #12

                ;Initial Stream data.
                ;  Identical to Spectrum at 15C6

11C1 0100         DEFW #0001    ;Stream FD gets channel K
11C3 0600         DEFW #0006    ;Stream FE gets channel S
11C5 0B00         DEFW #000B    ;Stream FF gets channel R
11C7 0100         DEFW #0001    ;Stream 00 gets channel K
11C9 0100         DEFW #0001    ;Stream 01 gets channel K
11CB 0600         DEFW #0006    ;Stream 02 gets channel S
11CD 1000         DEFW #0010    ;Stream 03 gets channel P

                ;Preprocessor for current input routine. (Presently used only t
                ; read the keyboard
                ;  Identical to Spectrum at 15D4

11CF FDCB026E L11CF BIT 5,(IY+2)  ;TVFLAG - to clear the edit line
11D3 2004         JR  NZ,L11D9    ;if it's not necessary after a keypre

11D5 FDCB020E     SET 3,(IY+2)    ;TVFLAG - Echo requested

11D9 CDE111 L11D9 CALL #11E1      ;Eventually does a CALL (HL)
11DC D8           RET C

11DD 28FA         JR  Z,L11D9

11DF CF           RST 8
11E0 07           DEFB #07        ;Error 8 - End of File

                ;Point to current channel input address

                ;  Identical to Spectrum at 15E6

11E1 D9           EXX
11E2 E5           PUSH HL         ;save registers
11E3 2A515C       LD  HL,(CURCHL) ;Address of current output address
11E6 23           INC HL
11E7 23           INC HL
11E8 1808         JR  L11F2

$$$$$$$$$$ ;Output character to current channel (Also has additions to input
                ;  Similar to Spectrum at 15EF, but with considerable additions

                ;Enter here to first add #30 to character
11EA 1E30         LD  E,#30
11EC 83           ADD A,E
                ;Enter here to output character as is. RST 10 uses this
11ED D9           EXX
11EE E5           PUSH HL
11EF 2A515C       LD  HL,(CURCHL)

11F2 08     L11F2 EX  AF,AF'
11F3 3A8F5C       LD  A,(CURCHN)
11F6 FE02         CP  #02         ;Is bank # > 01?
11F8 300B         JR  NC,L1205

11FA 08           EX  AF,AF'
11FB 5E           LD  E,(HL)
11FC 23           INC HL
11FD 56           LD  D,(HL)
11FE EB           EX  DE,HL
11FF CD6412       CALL #1264      ;A JP (HL). Effectively, a CALL (HL)
1202 E1           POP HL
1203 D9           EXX
1204 C9           RET
```

```
                ;Here for current channel bank = 2 or greater
1205 08       L9205 EX   AF,AF'        ;BUG!!! this is restored too early!!!
1206 2A515C         LD   HL,(CURCHL)
1209 46             LD   B,(HL)
120A 0E88           LD   C,#88          ;All chunks except 3 & 7
120C 3ACA5C         LD   A,(ARSFLG)     ;destroys output character, due to bug
120F CB47           BIT  0,A            ;0=input, 1=output, if no bug
1211 2002           JR   NZ,L9215       ;if it's an output routine

1213 23             INC  HL
1214 23             INC  HL             ;Shift to input address

1215 3AC85C   L9215 LD   A,(STRMNO)     ;Also destroys output character
1218 5F             LD   E,A
1219 1600           LD   D,#00
121B D5             PUSH DE             ;Stream number is an input parameter
121C 110700         LD   DE,#0007
121F 19             ADD  HL,DE
1220 E5             PUSH HL             ;Address
1221 C5             PUSH BC             ;Bank/Horiz Select
1222 010200         LD   BC,#0002
1225 C5             PUSH BC             ;2 bytes of output parameters
1226 010000         LD   BC,#0000
1229 C5             PUSH BC             ;No input params
122A CD0065         CALL #65D0          ;CALL_BANK
122D E1             POP  HL
122E D9             EXX
122F C9             RET

;;;;;;;;;;   ;Attatch current channel to stream whose # is in A
            ;  Similar to Spectrum at 1601

1230 87             ADD  A,A
1231 C616           ADD  A,#16
1233 6F             LD   L,A
1234 265C           LD   H,#5C          ;HL = addr of stream displacement
1236 5E             LD   E,(HL)
1237 23             INC  HL
1238 56             LD   D,(HL)         ;DE = actual displacement
1239 7A             LD   A,D
123A B3             OR   E
123B 2002           JR   NZ,L923F       ;If it's legal (not zero)

                ;Error if displacement is 0 (stream closed)
123D CF             RST  8
123E 17             DEFB #17            ;Error 0 - Invalid stream
            ;If MSB is 1, then it was a SYSCON displacement for expansion bank
123F FE80     L923F CP   #80
1241 3022           JR   NC,L9265       ;For expansion bank

1243 1B             DEC  DE             ;Displacement starts with 0
1244 2A4F5C         LD   HL,(CHANS)
1247 19             ADD  HL,DE          ;Address of channel output address

            ;Find out which channel & jump to proper flags handler
            ;  Similar to Spectrum at 1615

1248 22515C         LD   (CURCHL),HL
124B 3E00           LD   A,#00
124D 32BF5C         LD   (CURCBN),A     ;Current channel bank # gets 0, so as
                                        ; not to activate additional code in
                                        ; the output character routine
                                        ;In this case only, 00 points to home
                                        ; bank.
1250 FDCB30A6       RES  4,(IY+48)      ;Not channel K
1254 23             INC  HL
1255 23             INC  HL
1256 23             INC  HL
1257 23             INC  HL             ;Point to channel specifier (character)
1258 4E             LD   C,(HL)         ;get it
1259 219312         LD   HL,#1293       ;Address of lookup table
125C CD6B13         CALL #136B          ;Scan the table
125F D0             RET  NC             ;Return if no match
1260 1600           LD   D,#00
1262 5E             LD   E,(HL)
1263 19             ADD  HL,DE          ;Get address of flags adjuster
1264 E9             JP   (HL)           ;Adjust the flags (chan specific open)

;;;;;;;;   ;Addition to Attatch Current Channel routine, to open a channel
            ; to an expansion bank. Won't work because of bugs
            ;  Has no comparable Spectrum routine

1265 2ABC5C   L9265 LD   HL,(SYSCON)    ;HL points to SYSCON table
1268 B680           SUB  #80            ;BUG!! Supposed to restore D register,
126A 57             LD   D,A            ; but E has been ORed in. Makes garbage
126B 19             ADD  HL,DE
126C 22515C         LD   (CURCHL),HL    ;In this case, CURCHL points to addr of
                                        ; bank number
126F 7E             LD   A,(HL)
1270 32BF5C         LD   (CURCBN),A
1273 FDCB30A6       RES  4,(IY+48)      ;FLAGS2 - Not channel K

;CURCHL is left pointing to a SYSCON 01; not a channel. The "attatch code" may
; want to insert a new channel & point CURCHL to it.
1277 23             INC  HL
1278 23             INC  HL
1279 23             INC  HL
127A 23             INC  HL
127B 23             INC  HL
127C 23             INC  HL             ;Point to Attatch Current Channel code
                                        ; specific to this channel (SYSCON 07)
127D 3ABF5C         LD   A,(CURCBN)     ;CURCBN - A already has this
1280 47             LD   B,A            ;Bank #
1281 0E88           LD   C,#88          ;Don't deselect RAM resident code!
1283 56             LD   D,(HL)
1284 23             INC  HL
1285 5E             LD   E,(HL)         ;DE = address
1286 62             LD   H,D
1287 6B             LD   L,E            ;Now it's in HL
1288 E5             PUSH HL             ;Address
1289 C5             PUSH BC             ;Bank #/Horiz select
128A 010000         LD   BC,#0000
128D C5             PUSH BC             ;No output params
128E C5             PUSH BC             ;No input params
128F CD0065         CALL #65D0          ;CALL_BANK
1292 C9             RET

            ;Table of channel routine displacements for channel specific
            ; attatch code.
            ;  Identical to Spectrum at 162D

1293 4B06           DEFB "K",#06        ;Channel K routine at 129A
1295 5312           DEFB "S",#12        ;Channel S routine at 12A8
1297 501B           DEFB "P",#1B        ;Channel P routine at 12B3
1299 00             DEFB #00            ;Marks end of table

            ;Adjust flags for channel K = Current Channel
            ;  Identical to Spectrum at 1634

129A FDCB02C6       SET  0,(IY+2)       ;TVFLAG - Lower screen
129E FDCB01AE       RES  5,(IY+1)       ;FLAGS - Ready for key
12A2 FDCB30E6       SET  4,(IY+48)      ;FLAGS2 - channel K
12A6 1804           JR   L92AC

            ;Adjust flags for channel S = Current Channel
            ;  Identical to Spectrum at 1642

12A8 FDCB0286       RES  0,(IY+2)       ;TVFLAG - Main screen
12AC FDCB01BE L92AC RES  1,(IY+1)       ;FLAGS - Send to screen, not printer
12B0 C38808         JP   #0888          ;Use permanent colors & RETurn

            ;Adjust flags for channel P = Current Channel
            ;  Identical to Spectrum at 1648

12B3 FDCB01CE       SET  1,(IY+1)       ;FLAGS - Send to printer, not screen
12B7 C9             RET

            ;Open up BC bytes at the location before HL
            ;  Identical to Spectrum at 1652
            ;Enter here to open one space
12B8 010100         LD   BC,#0001

            ;Enter here to open BC spaces
12BB E5             PUSH HL
12BC CD881F         CALL #1F88          ;Make sure there's room
12BF E1             POP  HL
12C0 CDCA12         CALL #12CA          ;Open the space
12C3 2A435C         LD   HL,(STKEND)
12C6 EB             EX   DE,HL
12C7 EDB8           LDDR
12C9 C9             RET
```

```
                ;This routine actually modifies the system variables to reflect
                ; the recent space opened or closed up.
                ;  Similar to Spectrum at 1664

12CA F5         L92CA PUSH AF
12CB E5               PUSH HL
12CC 21C45C           LD   HL,ARSBUF
12CF 5E               LD   E,(HL)
12D0 23               INC  HL
12D1 56               LD   D,(HL)
12D2 E3               EX   (SP),HL
12D3 A7               AND  A
12D4 ED52             SBC  HL,DE
12D6 19               ADD  HL,DE
12D7 E3               EX   (SP),HL
12D8 3006             JR   NC,L92E0

12DA EB               EX   DE,HL
12DB 09               ADD  HL,BC
12DC EB               EX   DE,HL
12DD 72               LD   (HL),D
12DE 2B               DEC  HL
12DF 73               LD   (HL),E

12E0 21485C     L92E0 LD   HL,VARS      ;First of the Spectrum pointers
12E3 3E0E             LD   A,0E         ;How many pointers we may update

                ;Loop for all 0E, and change only those that need it
12E5 FE09       L92E5 CP   09           ;For NXTLIN
12E7 2804             JR   Z,L92ED

12E9 FE08             CP   08           ;For DATADD
12EB 2009             JR   NZ,L92FA

                ;Here when updating NXTLIN or DATADD. We don't update them if
                ; there's an ARGS present
12ED E5         L92ED PUSH HL
12EE 21C65C           LD   HL,ARSFLG    ;ARSFLG
12F1 6E               LD   L,(HL)
12F2 CB7D             BIT  7,L
12F4 E1               POP  HL
12F5 2803             JR   Z,L92FA      ;If there's no ARGS present

12F7 23               INC  HL
12F8 1814             JR   L930E

                ;Here for no ARGS. This is like the Spectrum does it

12FA 5E         L92FA LD   E,(HL)
12FB 23               INC  HL
12FC 56               LD   D,(HL)
12FD E3               EX   (SP),HL
12FE A7               AND  A
12FF ED52             SBC  HL,DE
1301 19               ADD  HL,DE
1302 E3               EX   (SP),HL
1303 3009             JR   NC,L930E     ;If we don't need to update the pointer

                ;Here if the pointer is affected by the opened space. Update it
1305 D5               PUSH DE
1306 EB               EX   DE,HL
1307 09               ADD  HL,BC
1308 EB               EX   DE,HL
1309 72               LD   (HL),D
130A 2B               DEC  HL
130B 73               LD   (HL),E
130C 23               INC  HL
130D D1               POP  DE

130E 23         L930E INC  HL           ;Point to the next system variable
130F 3D               DEC  A
1310 20D3             JR   NZ,L92E5     ;If we haven't scanned them all, yet

1312 EB               EX   DE,HL
1313 D1               POP  DE
1314 F1               POP  AF
1315 A7               AND  A
1316 ED52             SBC  HL,DE
1318 44               LD   B,H
1319 4D               LD   C,L
131A 03               INC  BC
131B 19               ADD  HL,DE
```



```
131C EB               EX   DE,HL
131D C9               RET

                ;This spot is simply set to have 00000. Used in following code
                ;  Identical to Spectrum at 168F

131E 0000             DEFW 00000        ;A fake "Basic line" numbered 0

                ;Gets the line number.  Includes a dummy entry point to
                ; return a line number 0.
                ;  Identical to Spectrum at 1961

1320 EB         L9320 EX   DE,HL
1321 111E13           LD   DE,131E

                ;This is the normal entry point. DE points to line number
1324 7E               LD   A,(HL)
1325 E6C0             AND  0C0
1327 20F7             JR   NZ,L9320

1329 56               LD   D,(HL)
132A 23               INC  HL
132B 5E               LD   E,(HL)
132C C9               RET

                ;Opens space below the calculator stack (& above the workspace
                ;  Identical to Spectrum at 169E
132D 2A635C           LD   HL,(STKBOT)  ;Bottom of calculator stack
1330 2B               DEC  HL           ;HL points to top of workspace
1331 CDB812           CALL 12B8         ;Open up BC spaces
1334 23               INC  HL
1335 23               INC  HL
1336 C1               POP  BC
1337 ED43615C         LD   (WORKSP),BC
133B C1               POP  BC
133C EB               EX   DE,HL
133D 23               INC  HL
133E C9               RET

                ;Reclaim the various work areas, to their minimum lengths
                ;  Identical to Spectrum at 16B0

133F 2A595C           LD   HL,(E_LINE)  ;E_LINE. Point to edit buffer
1342 360D             LD   (HL),0D      ;ENTER character. The minimum edit is
1344 22585C           LD   (K_CUR),HL
1347 23               INC  HL
1348 3680             LD   (HL),80
134A 23               INC  HL
134B 22615C           LD   (WORKSP),HL
134E 2A615C           LD   HL,(WORKSP)
1351 22635C           LD   (STKBOT),HL
1354 2A635C           LD   HL,(STKBOT)
1357 22655C           LD   (STKEND),HL
135A E5               PUSH HL
135B 21925C           LD   HL,MEMBOT
135E 22685C           LD   (MEM),HL
1361 E1               POP  HL
1362 C9               RET

                ;Reclaim the Edit workspace
                ;  Identical to Spectrum at 16D4
1363 ED5B595C         LD   DE,(E_LINE)
1367 C34D17           JP   174D         ;To reclaim the space

                ;Table look up routine. Used all over to scan the odd ROM table
                ;  Identical to Spectrum at 16BB

                ;This is a loop point -- NOT the entry point
136A 23         L936A INC  HL           ;Point to next entry, first byte

                ;Enter here, instead
136B 7E               LD   A,(HL)       ;Get next entry (first byte)
136C A7               AND  A
136D C8               RET  Z            ;00 marks end of table
136E B9               CP   C
136F 23               INC  HL           ;Point to second byte
1370 20F8             JR   NZ,L936A     ;If C does not match the table entry

                ;Here if they match.  HL points to second byte
1372 37               SCF
1373 C9               RET
```

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October 4, 1987

Press Release

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